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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/786,244	02/24/2004	Ludger Mimberg	NVID-P001166	2724
7590 03/02/2005 WAGNER, MURABITO & HAO LLP Third Floor Two North Market Street San Jose, CA 95113			EXAMINER SMITH, TYRONE W	
			ART UNIT 2837	PAPER NUMBER

DATE MAILED: 03/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/786,244

Applicant(s)

MIMBERG, LUDGER

Examiner

Tyrone W. Smith

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– The MAILING DATE of this communication appears on the cover sheet with the correspondence address –

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-26 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 February 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____ | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Drawings

1. Figures 1A through 3 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 2, 23 and 24 rejected under 35 U.S.C. 102(b) as being anticipated by the Admitted Prior Art of Record (Figure 1A).

Regarding Claims 1, 2, 23 and 24. Admitted Prior Art of Record (Figure 1A) discloses a pulse width modulation generator (Figure 1A item 110) for generating a pulse width modulation signal and a drive stage circuit (Figure 1A item 145) coupled to the pulse width modulation generator and for switch mode converting a supply voltage (Figure 1A item 115) into a linear

voltage for driving a fan, wherein a voltage level of said linear voltage is a function of a pulse width modulation signal.

4. Claims 1-4 and 23-26 rejected under 35 U.S.C. 102(b) as being anticipated by Huynh et al (6040668).

Regarding Claims 1, 2, 23 and 24. Huynh discloses a monolithic fan controller which includes pulse width modulation generator (Figure 1 item 10) for generating a pulse width modulation signal and a drive stage circuit (Figure 1 items 22, R1, Q1) coupled to the pulse width modulation generator and for switch mode converting a supply voltage (Figure 1 items 30 and 32) into a linear voltage for driving a fan, wherein a voltage level of said linear voltage is a function of a pulse width modulation signal.

Regarding Claims 3 and 25. Huynh discloses a thermal monitor (Figure 1 item 40) having an output coupled to an input of the pulse width modulation generator (Figure 1 item 10) and developing a PWM signal based on the sensed temperature.

Regarding Claims 4 and 26. Huynh discloses a speed sensor (Figure 1 item 26) having an input coupled to an output of the fan and an output coupled to an input of the pulse width modulation generator and developing a PWM signal based on the sensed speed.

Refer to the abstract, column 2 lines 29-67, column 3 lines 1-64 and column 7 lines 25-62.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to

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a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 5-22 rejected under 35 U.S.C. 103(a) as being unpatentable over Huynh et al (6040668) in view of Cheng et al (6853569).

Regarding Claims 5, 8, 12 and 17. Huynh discloses a monolithic fan controller which includes pulse width modulation generator (Figure 1 item 10) for generating a pulse width modulation signal and a drive stage circuit (Figure 1 items 22, R1, Q1) coupled to the pulse width modulation generator and for switch mode converting a supply voltage (Figure 1 items 30 and 32) into a linear voltage for driving a fan, wherein a voltage level of said linear voltage is a function of a pulse width modulation signal. However, Huynh does not disclose the structure of the drive stage as disclosed in claims 5 and 8.

Cheng discloses a DC-to-DC converter, which can be used as a drive stage, with a first transistor (Figure 1, 3 and 4 item 4) having a gate for receiving the pulse width modulation signal and a source coupled to a first potential; a current shunting element (Figure 1, 3 and 4 item 5) having a first terminal coupled to a drain of the first transistor and a second terminal coupled to a second potential; a capacitor (Figure 1, 3 and 4 item 13) having a first terminal coupled to the second terminal of the current shunting element, and an inductor (Figure 1, 3 and 4 item 14) having a first terminal coupled to a second terminal of the capacitor and a second terminal coupled to said first terminal of said current shunting element and to the drain of the first transistor. The capacitor is coupled to the output (across) of the systems (Figure 1 item 15).

It would have been obvious to one of ordinary skill in the art at the time of invention to use the drive stage concept of Cheng with Huynh's a monolithic fan controller. The advantage of combining the two would provide a system that provides bi-directional power flow of DC-to-DC

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converters that gives double or halved voltage or inverted voltage according to the power flow direction of the circuits.

Regarding Claims 6, 7 and 18-22. M.P.E.P. Chapter 2144.05 Optimum Ranges Optimization Within Prior Art Conditions or Through Routine Experimentation: B. Only Result-Effective Variables Can Be Optimized: A particular parameter must first be recognized as a result-effective variable, i.e., a variable, which achieves a recognized result, before the determination of the optimum or workable ranges of, said variable might be characterized as routine experimentation. In re Antonie, 559 F.2d 618, 195 USPQ 6 (CCPA 1977) (The claimed wastewater treatment device had a tank volume to contractor area of 0.12 gal./sq. ft. The prior art did not recognize that treatment capacity is a function of the tank volume to contractor ratio, and therefore the parameter optimized was not recognized in the art to be a result-effective variable.). See also In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980) (prior art suggested proportional balancing to achieve desired results in the formation of an alloy).

It would have been obvious to one of ordinary skill in the art at the time of invention to use different ranges in the invention. Examiner believes, within the scope of case law, that the ranges used in the invention, which provide no new and recognized result, can be adjusted according to the meet the needs and results of the inventor(s).

Regarding Claims 9 and 10. Cheng discloses a DC-to-DC converter, which can be used as a drive stage, current shunting element comprises a diode (Figures 1, 3 and 4 item 8) having an anode coupled to the drain of the first transistor and to the second terminal of the inductor, and a cathode coupled to the second potential and to the first terminal of the capacitor (Figures 1, 3 and 4 item 8) or current shunting element comprises a second transistor (Figure 1, 3 and 4 item 5) having a gate for receiving a complement of the pulse width modulation signal, a source

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coupled to the drain of the first transistor and to the second terminal of the inductor, and a drain coupled to the second potential and to the first terminal of the capacitor.

It would have been obvious to one of ordinary skill in the art at the time of invention to use the drive stage concept of Cheng with Huynh's a monolithic fan controller. The advantage of combining the two would provide a system that provides bi-directional power flow of DC-to-DC converters that gives double or halved voltage or inverted voltage according to the power flow direction of the circuits.

Regarding Claims 11 and 13-16. Huynh discloses a thermal monitor (Figure 1 item 40) having an output coupled to an input of the pulse width modulation generator (Figure 1 item 10) and developing a PWM signal based on the sensed temperature and speed sensor (Figure 1 item 26) having an input coupled to an output of the fan and an output coupled to an input of the pulse width m It would have been obvious to one of ordinary skill in the art at the time of invention to use the drive stage concept of Cheng with Huynh's a monolithic fan controller.

It would have been obvious to one of ordinary skill in the art at the time of invention to use the drive stage concept of Cheng with Huynh's a monolithic fan controller. The advantage of combining the two would provide a system that provides bi-directional power flow of DC-to-DC converters that gives double or halved voltage or inverted voltage according to the power flow direction of the circuits.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Pertinent art(s) of record is disclosed in the PTO-892.

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8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tyrone W. Smith whose telephone number is 571-272-2075. The examiner can normally be reached on weekdays from 8:30am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Martin, can be reached on 571-272-2800 ext. 37. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tyrone Smith
Patent Examiner

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DAVID MARTIN
SUPERVISORY PATENT EXAMINER
TEC. 2837
TECHNOLOGY CENTER 2800